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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,457	10/22/2001	Timothy J. Boyle	023227.P040	4010

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Stephen M. De Klerk
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

NGUYEN, JIMMY

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,457

Applicant(s)

BOYLE ET AL.

Examiner

Jimmy Nguyen

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 –9 and 15,16, 18 –22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakagomi et al (US 5742173).

As to claims 1, 15, Nakagomi et al disclose (figs 3 – 7) a method of testing a circuit on a substrate, comprising:

locating the substrate (2) in a transfer chuck (handler section 102);

moving a surface of a test chuck (3, column 6 line 14, moving the measuring section 106 and tester is not shown) into contact with the substrate (2) held by the transfer chuck (102);

securing the substrate (2) to the test chuck (3);

recording an image (by the CCD 34b) of a surface of the substrate (2) before having moved off the transfer chuck (102);

moving the test chuck (the probe board 25) relative to the transfer chuck (3) so that the substrate moves off the transfer chuck (handler section 102),

moving terminals on the substrate into contact with contacts to electrically connect the circuit through terminals and the contacts to an electric tester (when the probe board comes to contact with the pad on substrate 2);

relaying signals through the terminals and the contacts between the electric tester and the circuit (applying the signal from the tester to the substrate 2);

disengaging the terminals from the contacts (the stage 3 is lower to disengage); and removing the substrate (2) from the test chuck (3) (return the substrate by handler).

As to claims 2, 7, Nakagomi et al disclose (figs 3 – 7) the image is recorded (34b) while the substrate (2) moves off the transfer chuck (before the chuck 3 move off the substrate).

As to claims 3, 9, Nakagomi et al disclose (figs 3 – 7) the image is recorded by an image recordation device (34b) which is mounted in a stationary position relative to the transfer chuck.

As to claim 4, Nakagomi et al disclose (figs 3 – 7) the substrate (2) moves off the transfer chuck (handler section 102), the surface of the test chuck is longer than a distance between a location where the substrate leaves the transfer chuck and a location where the image recordation focuses on the substrate (as seen in the figures).

As to claim 5, Nakagomi et al disclose (figs 3 – 7) the surface of the test chuck (3) contacts a lower surface of the substrate (2) and the image recordation device (34b) is located above an upper surface of the substrate (2).

As to claims 6, 16, Nakagomi et al disclose (figs 3 – 7) the image is recorded (34b), images of surfaces of a plurality of separate substrates (2) are simultaneously recorded.

As to claims 18 – 22, Nakagomi et al disclose (figs 3 – 7) the method and the apparatus for testing a circuit on a substrate. The method claims have been rejected as state above. Therefore, the apparatus claims are also rejected under same circumstance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10 - 14, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagomi et al (US 5742173) in view of Takahashi et al (US 6111421).

As to claims 10, 17, Nakagomi et al disclose (figs 3 – 7) method for probe testing the substrate except for testing those substrates under the temperature condition. On the other hand, Takahashi et al teach the heating or cooling (20) the substrate (W).

It would have been obvious to one having an ordinary skill in the art at the time of the invention was made to modify Nakagomi et al testing system and add the temperature mechanism of Takahashi et al for purpose of testing reliability of dut.


As to claims 11 - 13, Nakagomi et al disclose (fig 1) the substrate (W) is heated or cooled after being located on the transfer chuck but before recording of the image (21A) and the transfer chuck (11) move horizontally after heating or cooling of the substrate (W) and the thermal conditioning chuck (19) moved away from the substrate after the substrate (W) is heated or cooled.

As to claims 14, Nakagomi et al disclose (fig 1) the substrate (W) is located in a recess of the thermal conditioning chuck (20)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Nguyen at (703) 306-5858. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.

JN.
May 2, 2003



KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800